



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Group Art Unit 3747

3747
#9/10
JP
12-18-02

In re

Patent Application of

Nicholas Robert Hirsch, et al.

Application No. 09/600,096

Confirmation No.: 7825

Filed: June 7, 2001

Examiner: Jeffrey Olsen

"FOUR-STROKE INTERNAL COMBUSTION
ENGINE"

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Transmitted herewith is an Amendment in the above-identified application.

The fee has been calculated as shown below.

I, Gloria Jean Kopac, hereby certify that this correspondence is being deposited with the US Postal Service as first class mail in an envelope addressed to Assistant Commissioner for Patents, Washington, D.C. 20231, on the date of my signature.

Gloria Jean Kopac
Signature

11/26/02
Date of Signature

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DEC 09 2002
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CLAIMS AS AMENDED							
(1)	(2) CLAIMS REMAINING AFTER AMENDMENT	(3)	(4) HIGHEST NO. PREVIOUSLY PAID FOR	(5) PRESENT EXTRA	(6) RATE	(7) ADDITIONAL FEE	
TOTAL CLAIMS	91	MINUS	89	2	X \$18	36.00	
INDEP. CLAIMS	13	MINUS	12	1	X \$84	84.00	
TOTAL ADDITIONAL FEE FOR THIS AMENDMENT ----						120.00	

A check in the amount of \$120.00 is attached.

In the event Applicant has overlooked the need to request an extension of time, please consider this a request for same.

The Applicants are also submitting herewith a Request by Applicants for Interference with Application No. 09/865,544 having Publication No. US2001/0045199. The claims being added by the enclosed Amendment are copied from this application.



Charge or credit Deposit Account No. 13-3080 with any shortage or overpayment of the fees associated with the Amendment, the Request by Applicants for Interference, or otherwise associated with this communication. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

Casimir F. Laska
Reg. No. 30,862

File No. 18367-9780

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Group Art Unit 3747

In re

Patent Application of

Nicholas Robert Hirsch et al.

Serial No. 09/600,096

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Filed: June 7, 2001

Examiner: Unknown

“FOUR-STROKE INTERNAL COMBUSTION
ENGINE”

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TECHNOLOGY CENTER R3700

**REQUEST BY APPLICANTS FOR INTERFERENCE WITH APPLICATION
UNDER 37 CFR §1.604**

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

In accordance with 37 CFR §1.604(a), the Applicants seek to have an interference declared between the above-identified patent application (hereinafter “the Hirsch Application”) and U.S. Patent Application No. 09/865,544 having Publication No. US2001/0045199 (hereinafter “the Nagai Application”). To provoke the interference, Applicants have herewith filed an Amendment to the Hirsch Application adding new claims 90 and 91 that are identical to claims 1 and 2 of the Nagai Application. Applicants also provide below some issues that should be considered by the Office prior to declaring the interference.

Proposed Counts and Claims Corresponding to the Counts

Pursuant to 37 CFR §1.604(a)(1), Applicants propose the following two counts:

Proposed Count A

An internal combustion engine, comprising:
a crankshaft;
a crank chamber accommodating said crankshaft;
an oil reservoir arranged adjacent to said crank chamber and containing engine oil; and a communicating channel having a flow resistance between said crank chamber and said oil reservoir; wherein said crank chamber and said oil reservoir are in communication with each other by way of said communicating channel, so that said flow resistance in said communicating channel causes a pressure in said oil reservoir to change with a delay with respect to a change of a pressure in said crank chamber, a pressure difference between said crank chamber and said oil reservoir causing a fluid flow through said communicating channel between said crank chamber and said oil reservoir.

The proposed count A is copied exactly from claim 1 of the Nagai Application. In accordance with 37 CFR §1.604(a)(1), claim 1 of the Nagai Application and claim 90 of the Hirsch Application correspond exactly to count A because they are identical to count A.

Proposed Count B

An internal combustion engine, comprising:
a crankshaft;
a crank chamber accommodating said crankshaft;
an oil reservoir arranged adjacent to said crank chamber and containing engine oil; and a communicating channel having a flow resistance between said crank chamber and said oil reservoir; wherein said crank chamber and said oil reservoir are in communication with each other by way of said communicating channel, so that said flow resistance in said communicating channel causes a pressure in said oil reservoir to change with a delay with respect to a change of a pressure in said crank chamber, a pressure difference between said crank chamber

and said oil reservoir causing a fluid flow through said communicating channel between said crank chamber and said oil reservoir;

wherein said crank chamber and said oil reservoir are separated from each other by a partition wall, and said communicating channel having said flow resistance is a small hole formed in said partition wall.

The proposed count B is copied exactly from claim 2 of the Nagai Application. In accordance with 37 CFR §1.604(a)(1), claim 2 of the Nagai Application and claim 91 of the Hirsch Application correspond exactly to count B because they are identical to count B.

Applicants Are Forced by the Patent Laws to Copy the Nagai Claims at this Time

The Applicants are requesting an interference at this time to preserve all rights to the claims corresponding to the counts. Under 35 USC §135(b)(2), a claim which is the same as, or for the same or substantially the same subject matter as, a claim of an application published under section 122(b) of this title may be made in an application filed after the application is published only if the claim is made before one year after the date on which the application is published: The Nagai Application was published on November 29, 2001. Although the counts may not be patentable to either party, as will be explained below, Applicants are forced to copy the claims before November 29, 2002 pursuant to 35 USC §135(b)(2) to preserve rights to the claims.

The applicability of 35 USC §122(b) and §135(b)(2) is somewhat unclear in the present situation. 35 USC §122(b) and §135(b)(2) were both created as part of the American Inventors Protection Act of 1999 (AIPA), which generally applies to patent applications filed in the U.S. after November 29, 2000. The Nagai Application has a U.S. filing date after the AIPA filing deadline, but claims priority to a foreign application filed in Japan before the AIPA deadline. An Office action was recently issued for the Nagai Application in which the Examiner stated that portions of the AIPA do not apply to the Nagai Application because it “was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 USC 122(b).” However, as mentioned above, the Nagai Application was published in the U.S. under 35 USC 122(b) on November 29, 2001, which is 18 months from the effective filing date in Japan of May 29, 2000.

Since the Nagai Application was clearly published under 35 USC §122(b), Applicants are proceeding on the assumption that 35 USC 135(b)(2) also applies to the Nagai Application.

Also, Applicants note that 35 USC §135(b)(2) applies to applications filed *after* the publication of the other application, which is *not* the case for the Hirsch Application. However, because 35 USC §135(b)(2) is a relatively new patent law and its interpretation and application are therefore relatively undeveloped, it is unclear to Applicants whether the one-year copying window applies to an application filed *before* the publication date of the other application. Therefore, Applicants have copied the claims of the Nagai Application at this time to remove any doubt on the issue, and to preserve Applicants' rights to the subject matter recited in the claims, if such subject matter is deemed allowable.

Interference Should be Held in Abeyance

Under 37 CFR §1.603, an interference will only be declared when the interfering subject matter is patentable. The Applicants therefore request that declaration of an interference be held in abeyance until the claims corresponding to the proposed counts are determined to be patentable. The Applicants are aware an Office action has been issued for the Nagai Application initially rejecting all the pending claims, including claims 1 and 2, under 35 USC §102(e) as being anticipated by U.S. Patent No. 5,947,075 (the "'075 Patent"). However, it is still possible for the Office to find claims 1 and 2 of the Nagai Application patentable.

Claims Not Patentable to Either Party

Applicants encourage the Office to find that the claims 1 and 2 corresponding to the proposed counts A and B are not patentable to either party over European Patent Application No. EP 0,779,412 (the "EP '412 Application"). The subject matter of the '075 Patent was publicly disclosed as the EP '412 Application, which was published on June 18, 1997. A copy of the EP '412 Application is enclosed herewith for the convenience of the Office, and Applicants request that the Office make the EP '412 Application of record in the Nagai Application if it has not already done so.

The EP '412 Application is §102(b) prior art for the Nagai Application because it was published more than one year before the earliest effective filing date of the Nagai Application. Claim 1 of the Nagai Application recites a communicating channel permitting flow between an

oil reservoir and a crank chamber. The EP '412 Application includes two communicating channels that permit flow between an oil reservoir and a crank chamber. As shown in Fig. 2 of the EP '412 Application, the first communicating channel is through-hole 46 that permits fluid flow between the oil reservoir 22 and the crank chamber 23. Also shown in Fig. 2, the second communicating channel is hole 48 that permits fluid flow between the oil reservoir 47 and the crank chamber 23.

In relation to the first communicating channel 46, the EP '412 Application, as shown in Fig. 2, discloses an engine E having a crankshaft 13, a crank chamber 23 accommodating the crankshaft 13, and an oil reservoir 22 arranged adjacent to the crank chamber 23 and containing engine oil O. The engine E includes a communicating channel 46 having a flow resistance between the crank chamber 23 and the oil reservoir 22. It is a well known principle of physics that any channel having a reduction in the cross-sectional area of the flow path will inherently provide flow resistance. Examples of this principle include flow restriction meters, or loss coefficients for flow paths having a sudden cross-sectional area changes, such as contraction loss coefficients, and expansion loss coefficients. Therefore, flow resistance is inherent in the communicating channel 46 because the flow path is reduced from the oil reservoir 22 to the communicating channel 46.

As shown in Fig. 2, the crank chamber 23 and the oil reservoir 22 are in communication with each other by way of the communicating channel 46, such that the flow resistance in the communicating channel 46 causes a pressure in the oil reservoir 22 to change with a delay with respect to a change of a pressure in the crank chamber 23. As explained in the EP '412 Application on page 5, lines 52-59, the pressure within the crank chamber 23 is reduced by the upward movement of the piston 8. The pressure reduction in the crank chamber 23 is delayed from reaching the oil reservoir 22 because of the flow restriction of the through-hole 46. A pressure difference between the crank chamber 23 and the oil reservoir 22 causes a fluid flow through the communicating channel 46 between the crank chamber 23 and the oil reservoir 22.

A flow restriction and delay is inherent in the through hole 46 connecting the crank chamber 23 and oil reservoir 22. It is well-known that fluids will migrate from a high-pressure zone into a low pressure zone. If the pressure reduction in the crank chamber 23 was *not* delayed from reaching the oil reservoir 22, the pressure within the crank chamber 23 and oil reservoir 22 would instantly equalize, and fluid would not be drawn from the oil reservoir to the crank

chamber through the through hole 46. The fact that the pressure reduction draws fluid from the oil reservoir 22 to the crank chamber 23 implies that the pressure reduction is delayed from reaching the oil reservoir 22. Therefore, the EP '412 Application anticipates claim 1 of the Nagai Application.

The EP '412 Application also anticipates claim 2 of the Nagai Application. Claim 2 recites that the crank chamber and the oil reservoir are separated from each other by a partition wall, and the communicating channel having the flow resistance is a small hole formed in the partition wall. In the embodiment described above, the through-hole 46 extends through the crank shaft 13, and the oil reservoir and crank chamber are separated by a wall, the crank shaft 13, and a plane bearing 16. However, as stated in the EP '412 Application on page 5, lines 16-18, "alternatively, the through-hole 46 may be provided in the plane bearing 16 or a partition wall between the oil reservoir chamber 22 and the crank chamber 23." This statement clearly anticipates claim 2 of the Nagai Application. Even if the EP '412 Application does not anticipate claims 1 and 2 of the Nagai Application, claims 1 and 2 are obvious in view of the EP '412 Application.

The EP '412 Application also discloses a second communicating channel 48 that anticipates claims 1 and 2 of the Nagai Application. In relation to the second communicating channel 48, the oil reservoir may include several connected cavities within the engine, such as the oil reservoir chamber 22, the through-holes 52, the oil return chamber 50, the valve chamber 47, valve operating chamber 24, and orifices 51. The oil circulates through the engine from valve chamber 47, to valve operating chamber 24, through orifices 51, to oil return chamber 50, through the through-holes 52, and back to the oil reservoir chamber 22. See the EP '412 Application on page 6, lines 46-49, and Figs. 2-7. Therefore, all of these cavities are smaller portions of the larger oil reservoir, since they are all connected in fluid communication with each other, and retain oil for the engine.

As shown in Fig. 2 of the EP '412 Application, the oil reservoir is adjacent the crank chamber 23 and retains oil. The crank chamber 23 and the oil reservoir 47 are in communication with each other through a communicating channel 48, and the communicating channel 48 has a flow resistance. As mentioned above, a communicating channel, or hole, will inherently provide a flow resistance for fluids flowing through the hole. The flow resistance in the communicating channel 48 causes a pressure in the oil reservoir 47 to change with delay with respect to a change

in pressure in the crank chamber 23. The pressure difference between the crank chamber 23 and the oil reservoir 47 causes a fluid flow through the communicating channel 48 between the crank chamber 23 and the oil reservoir 47. The pressure within the crank chamber 23 increases during downward motion of the piston, and fluid flows through the communicating channel 48 due to the pressure difference between the crank chamber 23 and oil reservoir 47. See the EP '412 Application on page 5, lines 55-58.

The second communicating channel 48 of the EP '412 Application also anticipates claim 2 of the Nagai Application. Claim 2 recites that the crank chamber and the oil reservoir are separated from each other by a partition wall, and the communicating channel having the flow resistance is a small hole formed in the partition wall. As shown in Fig. 2 of the EP '412 Application, the crank chamber 23 and the oil reservoir 47 are separated by a partition wall. The valve bore 48 is a small hole in the partition wall between the crank chamber 23 and the oil reservoir 47. Therefore, the EP '412 Application discloses all the elements recited in claim 2 of the Nagai Application. Once again, even if the EP '412 Application does not anticipate claims 1 and 2 of the Nagai Application, claims 1 and 2 are obvious in view of the EP '412 Application.

The EP '412 Application also discloses a one-way check valve 49 on the small hole 48, similar to the check valve recited in claim 6 and illustrated at 75 in Fig. 3 of the Nagai Application. The check-valve 49 only permits flow in one direction through the valve bore 48. Claim 6 of the Nagai Application recites permitting flow in the direction from the oil reservoir to the crank chamber. However, it would have been obvious to use the check valve 49 on an opening in which fluid flows through the opening in an opposite direction.

If Claims Are Patentable, No Interference Should be Declared and Claims Should be Awarded to Applicants Hirsch et al.

The Hirsch Application was filed on June 7, 2001, and is a national stage application under 35 USC §371 of PCT Application No. PCT/US00/00841 filed on January 13, 2000, which claims the benefit of U.S. Provisional Application No. 60/117,215 filed on January 25, 1999. The Nagai Application was filed on May 29, 2001, and claims the benefit of Japanese Patent No. 2000-157793 filed on May 29, 2000. It is unclear at this time whether Nagai et al. are entitled to May 29, 2000 as an effective filing date for claims 1 and 2. Therefore, the effective filing date of

the Hirsch Application is January 25, 1999, and the earliest possible filing date of the Nagai Application is May 29, 2000.

MPEP §2303 provides that, an interference will not be declared between pending applications if there is a difference of more than six (6) months in the effective filing dates of the applications. The effective filing date of the Hirsch Application is at least 16 months earlier than the effective filing date of the Nagai Application, which exceeds the maximum six-month differential. Therefore, if the claims corresponding to the count are patentable, the rights to the claims corresponding to the count should be automatically awarded to the Senior Party (Hirsch et al.) and cancelled from the Nagai Application because the Nagai Application was filed too late to be considered for an interference with the Hirsch Application.

If, after considering all of the above issues, the Office declares an interference and the Hirsch Application is not automatically awarded rights to the claims corresponding to the count as suggested above, then Hirsch et al. should be declared the Senior Party, and Nagai et al. will carry the burden of proof in the interference.

Prayer for Relief

In light of the foregoing, Applicants respectfully request that claims 1 and 2 of the Nagai Application and claims 90 and 91 of the Hirsch Application be found unpatentable to either party. If those claims are deemed to be patentable, however, Applicants request that the claims be awarded to Hirsch et al. and cancelled from the Nagai Application because the Nagai Application has an effective filing date at least 16 months after the effective filing date of the Hirsch Application. Finally, if the Office does not automatically award the claims to Hirsch et al., then Applicants respectfully request that the Office declare an interference between the Hirsch Application and the Nagai Application, with Hirsch et al. as the Senior Party, and Applicants request that the above-proposed counts be entered and that claims 1 and 2 of the Nagai Application and claims 90 and 91 of the Hirsch Application be found to correspond to counts A and B, as set forth above.



The undersigned attorney is available for telephone consultation to discuss any of the above issues.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "C. F. Laska".

Casimir F. Laska
Reg. No. 30,862

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